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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

WARE, CICELY Q

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 02/23/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/736,755

Applicant(s)

SOUISSI ET AL.

Examiner

Cicely Ware

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of **50 to 150** words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. Pg.7, line 2, examiner suggests either deleting the beginning "(" or adding the resulting "(" to subsequent lines.
3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claim 12 is rejected under 35 U.S.C. 102(e) as being anticipated by Adachi (US Patent 6,256,334) (cited by applicant).

With regard to claim 12, Adachi discloses a base station apparatus for a radio-communications network using a plurality of peer devices comprising the steps of: establishing wireless frequency hopping communications between two or more of the devices such that a plurality of the devices associated as members of a first wireless network are synchronized to time slots and operable to step through a predetermined frequency hopping sequence (abstract, col. 1, lines 22-32, col. 2, lines 2-7, 29-30, col. 3, lines 52-57); establishing wireless frequency hopping communications between two or more of the devices such that a different plurality of the devices are similarly associated as members of a second wireless network operable to step through a different predetermined frequency hopping sequence, wherein the frequency hopping sequences of the first and second wireless networks differ but can coincide in particular time slots (col. 2, lines 20-24, 29-30, 46-55, col. 3, lines 9-18); comparing the frequency

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hopping sequences of the first and second wireless networks over a prediction interval and identifying time slots in which said frequency hopping sequences coincide (col. 4, lines 20-35); altering a behavior of at least one of the first and second wireless networks such that one of the first and second wireless networks has improved ability to receive during said time slots in which the frequency hopping sequences coincide (col. 4, lines 60-67, col. 5, lines 1-5, 42-53).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 2, 5, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poyhonen (US Patent 5,570,352) (cited by applicant) in view of Adachi (US Patent 6,256,334).

(1) With regard to claim 1, Poyhonen discloses a digital cellular network/system comprising: a plurality of radio devices communicating together in groups defining networks, at least certain member devices of the networks transmitting on the respective said network during time slots and at radio frequencies determined by a frequency hopping sequence (abstract, col. 1, lines 10-15); wherein at least two of said groups having different frequency hopping sequences are sufficiently related that messages transmitted by at least two of the member devices can collide by causing at

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least one of co-channel and related channel interference between messages of the at least two said groups (col. 2, lines 9-21, 46-49, 63-67); and wherein at least one of said networks alters its behavior during the time slots at which the sequences coincide sufficiently to produce said interference, in a manner that reduces one of an incidence and an effect of collisions during the time slots when the sequences collide (col. 2, lines 63-67, col. 3, lines 1-3, col. 7, lines 6-8). However Poyhonen does not disclose wherein at least one of the devices compares the different radio frequency hopping sequences of the at least two said groups and identifies time slots at which said sequences coincide sufficiently to produce said interference, but it would be inherent to one of ordinary skill in the art to compare the frequency hopping sequences of neighboring groups to ensure the reliability on the reuse.

However Adachi discloses a base station apparatus for a radio-communication network wherein at least one of the devices compares the different radio frequency hopping sequences of at least two groups and identifies time slots at which the sequences coincide sufficiently to produce interference (col. 5, lines 6-16).

Therefore it would have been obvious to one of ordinary skill in the art to modify Poyhonen to compare the different radio frequency hopping sequences of at least two groups and identify time slots at which the sequences coincide sufficiently to produce interference in order to improve the throughput of a network system and increase the timing difference between frequency hopping of the network.

(2) With regard to claim 2, claim 2 inherits all the limitations of claim 1. Poyhonen further discloses wherein the groups having different frequency hopping sequences are

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sufficiently close in at least one of physical proximity and signal strength to produce said collisions (col. 7, lines 1-8).

(3) With regard to claim 5, claim 5, inherits all the limitations of claim 1.

Poyhonen further discloses wherein at least one of the networks that alters its behavior abstains from transmitting during the time slots at which the sequences collide (col. 7, lines 15-28).

(4) With regard to claim 6, claim 6 inherits all the limitations of claim 1. Poyhonen further discloses wherein at least one of the networks that alters its behavior changes at least one of transmission power and error correction level, during the time slots at which the sequences collide (col. 7, lines 15-28).

8. Claims 3, 4, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poyhonen (US Patent 5,570,352) in combination with Adachi (US Patent 6,256,334) as applied to claims 1 and 2 above, and further in view of Tony et al. (US Application 2001/0002912 A1).

(1) With regard to claim 3, claim 3 inherits all the limitations of claim 1. Poyhonen in combination with Adachi disclose all the limitations of claim 1. However Poyhonen in combination with Adachi do not disclose wherein each of the networks comprises a master device and at least one slave device, wherein the master device determines the radio frequency hopping sequence for the network, observed by the master device and at least one slave device.

However Tony et al. discloses a digital wireless communication system comprising a master device and at least one slave device, wherein the master device determines the radio frequency hopping sequence for the network, observed by the master device and at least one slave device (Pg. 1, col. 2, lines 26-29, 39-41).

Therefore it would have been obvious to one of ordinary skill in the art to modify the inventions of Poyhonen in combination with Eness to specify that each of the networks comprise a master device and at least one slave device, wherein the master device determines the radio frequency hopping sequence for the network, observed by the master device and at least one slave device for faster hopping and the use shorter data packets.

(2) With regard to claim 4, claim 4 inherits all the limitations of claim 2. Tony et al. further discloses wherein the devices have unique addresses and the radio frequency hopping sequence for each said network is derived from the unique address of the master device of said network (Pg. 2, col. 1, lines 44-55).

(3) With regard to claim 11, claim 11 inherits all the limitations of claim 1. Tony et al. further discloses wherein the network is configured according to at least one of IEEE standard 802.11, a Bluetooth scatter network, a Home RF network and a Metricom Ricochet network (Pg.1, col. 1, lines 30-36).

9. Claims 7 - 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poyhonen (US Patent 5,570,352) in combination with Adachi (US Patent 6,256,334) as applied to claim 1 above, and further in view of Gendel (US Patent 6,608,821).



(1) With regard to claim 7, claim 7 inherits all the limitations of claim 1. Poyhonen in combination with Adachi disclose all the limitations of claim 1 above. However Poyhonen in combination with Eness do not disclose wherein said at least one of the networks that alters its behavior is chosen according to a priority repetitively based upon a comparison of operational criteria of the networks.

However Gendel discloses a method of avoiding collisions wherein at least one of the networks that alters its behavior is chosen according to a priority repetitively based upon a comparison of operational criteria of the networks (col. 4, lines 18-19, 26-32, 35-40, col. 5, lines 56-61).

Therefore it would have been obvious to one of ordinary skill in the art to modify the inventions of Poyhonen in combination with Adachi to incorporate wherein at least one of the networks that alters its behavior is chosen according to a priority repetitively based upon a comparison of operational criteria of the networks in order to minimize the probability of repeated collisions among transmitted signals from non synchronized transmitters, thus achieving improved overall system performance (Gendel col. 1, lines 66-67, col. 2, lines 1-2).

(2) With regard to claim 8, claim 8 inherits all the limitations of claim 7. Gendel further discloses in (Fig. 3) wherein the priority is accorded anew for each of the time slots at which the sequences coincide (col. 5, lines 8-61, col. 10, lines 13-16).

(3) With regard to claim 9, claim 9 inherits all the limitations of claim 7. Gendel further discloses the priority is accorded based on a comparison of the devices and the networks for at least one of: a power level of transmissions in at least one direction

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between the devices, an interference level of said transmissions, an error level of the transmissions, a data throughput of the respective networks, a battery condition, a message latency, a number of previous attempts to transmit, a capture effectiveness, message urgency, terms of a subscription and device type (col. 1, lines 54-58, col. 2, lines 3-9).

(4) With regard to claim 10, claim 10 inherits all the limitations of claim 9. Adachi further discloses wherein priority is accorded in a manner tending to optimize data throughput for the devices on all the networks (col. 6, lines 53-59).

10. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi (US Patent 6,256,334) in view of Tony et al. (US Application 2001/0002912 A1).

(1) With regard to claim 13, claim 13 inherits all the limitations of claim 12. However Adachi does not disclose wherein the priorities are assigned by at least one master device synchronizing one of the networks.

However Tony et al. discloses a digital wireless communication system wherein the priorities are assigned by at least one master device synchronizing one of the networks (Pg. 1, col. 2, lines 46-48, 54-57).

Therefore it would have been obvious to one of ordinary skill in the art to modify Adachi to disclose wherein the priorities are assigned by at least one master device synchronizing one of the networks in order to limit the impact of random noise on long-distance links between units in the system (Tony et al. pg. 1, col. 1, lines 42-43).

(2) With regard to claim 14, claim 14 inherits all the limitations of claim 12. Tony et al. further disclose wherein at least some of the devices are mobile devices operable to join and to depart said wireless networks from time to time (Pg. 3, col. 2, lines 57-60, Pg. 4, col. 1, lines 4-9, 22-23).

11. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi (US Patent 6,256,334) in combination with Tony et al. (US Application 2001/0002912 A1) as applied to claim 13, in further view of Poyhonen (US Patent 5,570,352).

(1) With regard to claim 15, claim 15 inherits all the limitations of claim 13. Adachi in combination with Tony et al. disclose all the limitations of claim 13. However Adachi in combination with Tony et al. do not disclose wherein the at least one master is operable to cause an associated at least one of the first and second networks to abstain from communicating during said time slots in which the frequency hopping sequences coincide.

However Poyhonen discloses a digital cellular network wherein at least one master is operable to cause an associated one of the first and second networks to abstain from communicating during time slots in which the frequency hopping sequences coincide (col. 4, 46-61, col. 7, lines 15-28).

Therefore it would have been obvious to one of ordinary skill in the art to modify the inventions of Adachi in combination with Tony et al. to disclose wherein at least one master is operable to cause an associated one of the first and second networks to

abstain from communicating during time slots in which the frequency hopping sequences coincide in order to control a handover process when the mobile station is in an active state (Poyhonen col. 4, lines 62-63).

(2) With regard to claim 16, claim 16 inherits all the limitations of claim 13.

Poyhonen further discloses wherein that at least one controller is operable to cause an associated at least one of the first and second networks to alter its behavior by at least one of abstinence and a change of at least one of transmission power and error correction level during time slots in which the frequency hopping sequences coincide (col. 4, 46-61, col. 7, lines 15-28).

12. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi (US Patent 6,256,334) as applied to claim 12 above, in view of Gendel (US Patent 6,608,821).

(1) With regard to claim 17, claim 17 inherits all the limitations of claim 12.

However Adachi does not disclose wherein the behavior is altered according to priorities assigned and reassigned periodically based upon current conditions of the first and second networks.

However Gendel discloses a method for collision avoidance wherein the behavior is altered according to priorities assigned and reassigned periodically based upon current conditions of the first and second networks (col. 4, lines 18-19, 26-44).

Therefore it would have been obvious to one ordinary skill in the art to modify Adachi to incorporate wherein the behavior is altered according to priorities assigned

and reassigned periodically based upon current conditions of the first and second networks to minimize the probability of repeated collisions among transmitted signals from non synchronized transmitters, thus achieving improved overall system performance (Gendel col. 1, lines 66-67, col. 2, lines 1-2).

(2) With regard to claim 18, claim 18 inherits all the limitations of claim 17. Gendel further discloses in (Fig. 3) wherein the priorities are assigned for each instance in which the frequency hopping sequences coincide (col. 5, lines 8-61, col. 10, lines 13-16).

(3) With regard to claim 19, claim 19 inherits all the limitations of claim 18. Gendel further discloses wherein the priority is accorded based on a comparison of the devices and the networks for at least one of: a power level of transmissions in at least one direction between the devices, an interference level of said transmissions, an error level of the transmissions, a data throughput of the respective networks, a battery condition, a message latency, a number of previous attempts to transmit, a capture effectiveness, message urgency, terms of a subscription and device type (col. 1, lines 54-58, col. 2, lines 3-9).

### ***Conclusion***

13. The prior art made record of and not relied upon is considered pertinent to applicant's disclosure:

a. Eness US Patent 5,307,370 discloses a frequency-hopping cordless radio-telephone.

b. West US Patent 5,574,979 discloses a periodic interference avoidance in a wireless radio frequency communication system.


14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cicely Ware whose telephone number is 703-305-8326. The examiner can normally be reached on Monday – Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

*Cicely Ware*

cqw  
February 13, 2004

  
**STEPHEN CHIN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**